

US EPA ARCHIVE DOCUMENT

**Bi-Annual Progress Report
Of the
Early Action Compact
In the Fayetteville Metropolitan Statistical Area
North Carolina**



A joint effort by USEPA Region 4, North Carolina Department of Environment and Natural Resources, and the Cumberland County Board of Commissioners, Town of Falcon, City of Fayetteville, Fort Bragg Military Reservation, Town of Godwin, Town of Hope Mills, Town of Linden, Pope Air Force Base, Town of Spring Lake, Town of Stedman and Town of Wade and the Fayetteville Area Metropolitan Planning Organization

**June 30, 2006
Revised**

Introduction

The Fayetteville Metropolitan Statistical Area Early Action Compact (Fayetteville MSA EAC) requires that a semiannual report of activities undertaken by the state and local partners be submitted to the Environmental Protection Agency as part of the milestones determination. This report covers the activities and accomplishments during the period of June 30, 2005 to December 31, 2005. The first part of this report contains the local program updates, including the Stakeholders and Technical Committee members' activities, public outreach activities, a summary of "Be Aware of Our Air" campaign, and updates on the selected strategies. The second part of this report includes the information provided by the North Carolina Department of the Environment and Natural Resources, Division of Air Quality.

Many of the most important and beneficial strategies are not readily quantifiable, due to the type of activities they entail, or due to the fact that actual data is not readily available at this time. As the Fayetteville MSA has not previously been identified with an ambient air quality problem, it is expected that the Awareness Strategies will likely have the highest impact on NOx emission reductions. However, these strategies are not quantifiable because they require behavior changes, rather than regulatory changes. Therefore, we believe that, through a good awareness campaign combined with the other strategies we are proposing, this area will reach the maximum allowable emission reductions for voluntary measures of 3%.

Meetings and Public Involvement Activities

Staff attended the following meetings or participated in:

- Sustainable Sandhills Air Team Meeting (minutes available upon request)

January, March, April 2006

- Asthma Action Group (minutes available upon request)

March, April, June 2006

- Air Awareness

May 7, June 6, 13, 20 2006

- Southeast Diesel Collaborative Kick off Conference Call

May, 2006

- Air Quality Presentations

Lloyd Auman Elementary School "Project Move" March 2006
(Attendance: 42)

Max Abbott Elementary School “Project Move” March 2006
(**Attendance: 100**)

Sunshine House Daycare (Cliffdale Rd.) March 2006
(**Attendance: 23**)

Sunshine House Daycare (Raeford Rd.) March 2006
(**Attendance: 20**)

Sunshine House Daycare (Hope Mills Rd.) April 2006
(**Attendance: 30**)

Lloyd Auman Elementary School April 2006
(**Attendance: 70**)

Devers Elementary School (Fort Bragg) May 2006
(**Attendance: 125**)

McNair Elementary School (Fort Bragg) May 2006
(**Attendance: 125**)

- Public Events

“Spring Nature Fair” April, 2006
(**Attendance 800**)

“Be Aware of Our Air Day” April, 2006
(**Attendance: 200**)

Fayetteville Dogwood Festival April, 2006
(**Attendance: 20,000-50,000**)

Botanical Gardens “May Day” May 6, 2006
(**Attendance: 350**)

- Media Outreach

WFNC News May 16, 2006

WFNC Radio Show June 19, 2006

Fayetteville Observer Opinion May 2, 2006
“Dairies help people get the points about ozone”

Kidsville News “Clean Air/Dirty Air” (Circulation 33,000)	January 2006
Kidsville News “Clean Air/Dirty Air” (Circulation 33,000)	February 2006
Kidsville News “Clean Air/Dirty Air” (Circulation 33,000)	March 2006
Kidsville News “Ozone” (Circulation 33,000)	April 2006
Kidsville News “Be Aware of Our Air” (Circulation 33,000)	May 2006
Kidsville News “Ozone” (Circulation 33,000)	June 2006

“Be Aware Of Our Air”

“Be Aware Of Our Air” is an awareness and educational air quality campaign for Cumberland County, North Carolina. This air quality campaign is a combined effort between the Fayetteville Area Metropolitan Planning Organization and the Fayetteville Regional Office of the North Carolina Department of Environment and Natural Resources, Division of Air Quality.

The region covered all of Cumberland County including Fayetteville, (population over 125,241 in 2004) and Fort Bragg military reservation with approximately 43,000 soldiers. Cumberland County is an EAC area in which air quality education is a major component to reduce ozone, particulate matter, and air pollution in general.

Numerous marketing programs have been developed to educate the public regarding air quality. Different programs are used to educate specific groups within the public, including children, teens, adults, and parents. The effects of air awareness outreach programs cannot be quantitatively measured; but it is believed that education and understanding will reduce air pollution emissions.

Poster and Essay Contests began in Spring 2004 and have continued every year. The contests are open to all Cumberland County, Fort Bragg, and Pope AFB students grades K-7. These contests promote thinking about how air quality affects daily life. Monetary rewards are awarded. To expand participation we have advertised in Kidsville News!, at local events, and mailed personal letters to all Cumberland County principals. Submissions from the first contest have been created into a calendar for the 2005-2006 school year. The 520 calendars have been distributed to participants and used as educational material for other programs and displays. Submissions from the next two contests will be combined into an Air Awareness Book. We hope to put this book in the local community and state offices as educational material.

“Be Aware of Our Air Week” occurred May 1-7, 2006. It was launched with an event hosted by the Fayetteville Area Metropolitan Planning Organization. The event called *“Be Aware of our Air Day”*, was held on April 22, 2006 (Earth Day). The event consisted of information booths, sports clinics, and a physician testing for asthma, nurses testing for developmental delays, food and fun. The event was free to the public. Air Awareness Diaries were available during the event. These diaries challenge individuals to contribute to cleaner air by taking part in simple everyday activities such as riding a bike instead of driving, trip chaining, and taking a bag lunch. Both contests offered a variety of prizes including 3 bicycles to promote alternative transportation for the 2 children with the best diary and one adult.

To educate children, ***“Fresh Air”*** presentations were given on request at local schools and daycare centers. The presentations last about 45 minutes and focused on carpooling and additional behaviors to reduce air pollution. The curriculum included a story time of two books, a movie, and science experiments. Each child received fun informational coloring/activity books, and parents received a bag of air quality information. Materials for this program were used from the Texas DOT, NASA, Hamilton County Environmental Services, and NC DENR. We hope to create new lesson plans and continue with the Fresh Air presentations at the libraries and in the classroom.

Kidsville News! Is a free monthly educational publication that is distributed to all K-5th grade students in Cumberland County, Fort Bragg, Raeford, and Hoke County schools in addition to public libraries and other independent locations. The readership is about 80,000. We sponsor and create a page to teach air quality. The page includes activities, definitions, stories, and science experiments all focused on an air quality issue. Topics include: particulate matter, sulfur dioxide and nitrogen dioxide, ozone, carbon monoxide, and open burning. The air quality page started in August 2005 and will run until July 2006. We hope to extend this contract in the future.

The **Driving for Clean Air** program is an addition to the Cumberland County Driver's Education curriculum taught at local high schools. Two hours of the driver's education program has been set aside to teach about air quality. The curriculum includes having the students watch an "Easy Breathers" video that can be ordered at EasyBreathers.org and having the students read through and complete the activities in the "Cleaner Cars Student Manual" that was developed by and reproduced with the permission of the National Safety Council. In addition, fact sheets about ethanol, biodiesel, electric vehicles, and an alternative fuel comparison are given along with general air quality information. Tire pressure gauges with the NC DENR air quality website are given to each student to promote taking care of their car and thinking about the air around them as they drive.

Air Quality Displays are used throughout the community at many different events to promote awareness that air quality is a major issue in our region. Some of the events include Health Fairs, Festivals, Libraries, and the Cumberland County Fair. NC DENR and *It All Adds Up To Cleaner Air* supply the materials.

Air Quality Sponsorship has been developed between the Fayetteville Area Metropolitan Planning Organization and the two local sports teams, Fayetteville Guard (Arena Football) and the Fayetteville Swampdogs (Baseball). Both sponsorships include an advertisement developed by the Air Quality Coordinator which expresses the 10 simple steps individuals can do to improve air quality in the teams' souvenir program. The second advertisement is displayed on the teams outfield sign, also developed by the Air Quality Coordinator; the sign expresses the Air Quality Index Code with a website displayed for additional information.



AIR QUALITY STAKEHOLDERS OF CUMBERLAND COUNTY SELECTED OZONE CONTROL STRATEGIES UPDATE

Quantifiable SIP Strategies

MOBILE SOURCES

Inspection and Maintenance Program

The 1999 Clean Air Bill expanded the vehicle emissions inspection and maintenance program from 9 counties to 48, and improved the testing method. Vehicles are being tested using the onboard diagnostic system, which indicates NOx emissions, among other pollutants. The previously used tailpipe test did not measure NOx.

- The North Carolina Department of Environment and Natural Resources Division of Air Quality modeled these emission reductions for Cumberland County:
 - VOC: 0.6 Tons Per Day
 - NOx: 0.7 Tons Per Day
- This strategy was implemented on July 1, 2003.
- The adopting jurisdiction is all of Cumberland County.

Retrofitting Diesel School Buses

A \$50,000 grant has been received to fund retrofitting of 50 school buses serving the Fort Bragg Schools. It is expected that this project will decrease VOC emissions as well as other pollutants. The plan is to put Diesel Oxidation Catalysts on 50 school buses and crankcase spiracles on 13 of the 50.

- Previous update: The grant was officially signed and processed on September 20, 2004. The units are expected to be installed by Summer 2005 and will be installed before December 2005.
- Previous update: A company has been selected to perform the retrofit. The retrofit will take place before the start of the 2005-2006 school year.
- Previous Update: Due to the supply of parts the retrofit was not completed during the summer of 2005. The parts had not been delivered until the start of the 2006 school year. Half of the fleet has been completed; however some additional parts that were not originally sent out to complete the installation have delayed the process of retrofitting the remaining buses. 8 of the school buses were removed completely from the fleet due to the age of the buses. Diesel oxidation catalysts will be installed on 42 of the buses. Crankcases spiracles will be installed on 24 of the 42 buses. As soon as the additional part are delivered that remaining buses will be retrofitted.

- **Update:** As a result of a conflict between the manufacturer and the contractor hired to do the retrofit, the final 5 buses have not been retrofitted. NC DENR has extended the retrofit grant completion date to August 2006 so the final 5 buses can be completed. The manufacturer will be coming out in July 2006 to complete the retrofit and to inspect all of the buses in the fleet which received retrofits.
- **Update:** Cumberland County Schools were awarded a NC DENR Mobile Source Emissions Reduction grant for \$99,000 toward retrofitting their school bus fleet. To date a company has been selected to complete the retrofits.
- The Environmental Protection Agency shows these approximate decreases for Diesel Oxidation Catalysts under their *Verified Retrofit Technologies*:
 - PM: At least 20%
 - CO: At least 13%
 - VOC: At least 42%
- The adopting jurisdiction is Fort Bragg.

CONSERVATION

Outdoor Burning Ban

The North Carolina Environmental Management Commission approved a new rule that bans open burning on forecasted, “air quality action days”, Code Orange or above days. The ban applies to 39 counties in or around metropolitan areas of the state, including Cumberland County. The Division of Air Quality (DAQ) formed an Open Burning Outreach Team (OBOT). The team is responsible for helping to disseminate information to the public regarding open burning.

- The Division of Air Quality modeled these reductions for Cumberland County prohibiting open burning on code orange days (assuming a 50% compliance rate).
 - VOC: 0.2 Tons Per Day
 - NOx: 0.2 Tons Per Day
 - CO: 1.8 Tons Per Day
- This strategy was implemented on June 1, 2004.
- Previous Update: March 24, 2005 a member of the Open Burning Outreach Team (OBOT) gave a presentation of open burning for the Cumberland County Technical and Stakeholders Committee. On March 28, 2005, they gave another presentation with the Cumberland County Fire Association. On July 14th the OBOT is scheduled to give a presentation on open burning for the Cumberland Road Fire Department, which was requested for their whole department.

- Previous Update: The July 14th OBOT presentation was given to the Road Fire Department. The DAQ arranged to have billboards put up across the State, there was one located in Cumberland County for at least 30 days. The DAQ also provides the local fire departments with literature concerning open burning for them to distribute to local the citizens. We also implemented an open burning information line 1-877-OPEN-BURN (1-877-673-6287).
- **Update:** The Open Burning information line is currently continuing under operations. The Fayetteville Regional Office has continued to provide literature on the NC Open Burning regulations and alternatives for waste disposal to all fire departments to distribute to citizens and businesses. They have also scheduled an informational presentation on the NC Open Burning regulations to NC Department of Transportation district personnel before the end of the year (relative to land clearing and right of way maintenance burning that they, or contractors, do when developing or maintaining roads). The School Kit is still in the process of being developed in coordination with the NC Department of Public Instruction, to ensure competency goals are met with our activities and lesson plans. The tentative plan is to test the kits during summer programs to get input from teachers and children. Once the kits have been tested they will be ready to send out to target middle schools this fall. DAQ is targeting a mass mail out of NC Open Burning regulations and alternative waste disposal literature to golf courses within this year.
- The adopting jurisdiction is all of Cumberland County

Use renewable energy sources when available (i.e. solar and methane)

Landfill gas-to-energy projects provide environmental value by capturing methane emissions from landfills and displacing fossil fuel. Landfill gas is an attractive renewable energy alternative for many applications because of its 24 X 7 availability and high capacity factor (between 95 and 98%). Burning landfill gas converts methane into carbon dioxide, and therefore dramatically reduces the impact on climate change by reducing greenhouse gas (GHG) emissions. Landfill gas (LFG) procurement is both an opportunity for corporations to reduce their GHG emissions footprint and to create a more diversified energy portfolio. The World Resources Institute published a report, Corporate Guide to Green Power Markets. “Opportunities with Landfill Gas” is Installment 2 of this report. The Group has found that the most environmentally and economically attractive use of landfill gas, particularly in the absence of policy incentives such as production tax credits, is a medium-Btu “direct use” application, which Cargill, Inc. is currently using.

Cumberland County Landfill harvests methane and through a contract with Biomass Energy, then sells the energy to Cargill Inc., a local industry. Cargill

Inc. was using 1000 cubic feet/minute of landfill gas. As of June 2004, usage has been increasing steadily and forecasted to reach to 1600 cubic feet/minute by 2009. The first year Cargill reported use of landfill gas was in 1999 in the amount of 369,110,000 cubic feet.

- Estimated NOx reduction from this strategy is 5 tons per year. AP42, Table 2.4-5 was used to obtain emission reduction estimates. NOx savings were approximated using the flare NOx emission rate of 40 lb/million cubic feet, 252 million cubic feet/min of landfill gas usage (which is the increase of 600 cubic feet/minute multiplied by 7000 operating hours per year).
- In 2003 Cargill burned 67,983,000,000 cubic feet of landfill gas. Cargill is in the process of installing a larger gas boiler to burn additional landfill gas and hope to have it operational between May and August of 2005.
- Previous Update: Cargill was recently issued a permit to install and operate an additional boiler, which is capable of burning landfill gas. The heat input of this boiler is 53 million Btu per hour on landfill gas and 99 million Btu per hour on natural gas. It is the intention of Cargill Inc. to fully utilize all landfill gas generated by the Cumberland County Landfill.
- Previous Update: Cargill Inc. has purchased a new natural gas-fired boiler (53 million Btu per hour heat input for landfill gas and 99 million Btu per hour for natural gas). This new boiler will make it possible to burn additional landfill gas. Cargil Inc. anticipates commissioning the new boiler by the end of March 2006.
- Previous Update: Cargill Inc. has purchased a new natural gas-fired boiler (53 million Btu per hour heat input for landfill gas and 99 million Btu per hour for natural gas). This new boiler will make it possible to burn additional landfill gas. Cargil Inc. anticipates commissioning the new boiler by the end of March 2006.
- **Update:** Due to the hurricanes of last season the new boiler was delayed in being manufactured. However, the new boiler has been delivered to Cargill Inc.; due to the demand of steel, the structure which was to be built to house the boiler is not currently available. Once the building structure is completed the boiler will be installed. The new boiler will make it possible to burn an estimated 20%-25% additional landfill gas. As of May 2006, Cargill has burned 109,992,000 cubic feet of landfill gas.
- Previous Update: The Sustainable Sandhills Energy Team was recently awarded a \$5,000 Community Partner Small Grant from the NC Million Solar Roofs 2005. Sustainable Sandhills is an innovative partnership made up of participants from Fort Bragg, the surrounding community governments, nonprofits, citizens and universities from Cumberland, Harnett, Hoke, Moore, Richmond and Scotland Counties. One of the objectives of the Sustainable Sandhills Energy

Team includes a commitment to promote the use of renewable energy within the region. The organization is now incorporated as a non-profit initiative.

The Sustainable Sandhills Energy Team has identified three key target audiences for promoting solar power and other alternative energy to include:

- (1) Home Owners
The key messages to communicate to the homeowners include awareness of what types of solar energy are available, the benefits of renewable energy use, financial incentives, and how to find reliable installers in the region.
- (2) Installers, Business Owners, Developers and Local Governments
The key messages for this category include a communication of the desire of the Sandhills community to use solar energy, the potential market availability, benefits of the solar industry, and financial incentives.
- (3) Youth
A commitment to begin educating the Sandhills youth population on the benefits of solar power and the role of renewable energy in the region's future is in place.

To promote the initiatives goal of increasing awareness of solar energy technologies, benefits of renewable energy and available incentives, the team will develop a marketing plan to address the three target audiences. As a result of the lack of knowledge, recognition and understanding of solar applications, the major areas of focus for our marketing efforts will be in the areas of consumer understanding of solar applications and the benefits that can be gained from their use. To achieve this objective, a marketing plan is being established to share solar applications in the school systems around the region as well as participation in various local festivals or expositions that are appropriate. It is our intent to use PowerPoint presentations, brochures, and working display models that are a part of the awarded grant to achieve the desired results of developing a better understanding of the benefits of using solar in the Sandhills region.

- Previous Update: As part of the deliverables on the SS Energy Team's **\$5500** grant from the NC Million Solar Roofs, the Team completed the following items:
 - Marketing Plan: with slight changes in the target audience definitions (businesses, building professionals, gov't & institutional, homeowners, youth).
 - Brochure: some of the grant funds were used to produce a Sustainable Sandhills brochure featuring a section on the Energy Team's activities.
 - Demonstration equipment: A portable solar hot water heating unit and a solar electric fountain unit were designed and fabricated by the team for use at festivals and fairs in 2006. A "human powered" unit (similar to a stationary

bike) linked to a portable battery storage and inverter unit is also being fabricated. The portable battery storage unit will accept inputs from photovoltaic panels, the human powered unit and any other kind of renewable energy demo unit that the team decides to incorporate in the future. It allows standard 110V appliances or banks of lights to be powered "off-grid" by our renewable energy demo units at our booth exhibits!

- **Update:** As part of the deliverables on the SS Energy Team's **\$5500** grant from the NC Million Solar Roofs, the Team completed the following items:
 - A 20 minute PowerPoint presentation to raise awareness of energy conservation and efficiency measures. The presentation has been made to civic groups 6 times, with a total audience in excess of 200.
 - All demonstration equipment funded by the grant is now complete and in use at festivals and fairs. A "human powered" unit (similar to a stationary bike) linked to a portable battery storage and inverter unit was completed, and an electric meter that can be switched between an incandescent bulb and an equivalent compact fluorescent bulb is used to demonstrate how much energy can be saved by switching out a single bulb. The demonstration equipment was used at 3 outdoor festivals this spring.
 - A scholarship to subsidize the fee for 2 construction trades people (plumbers & electricians) to attend a 4 day NC State Renewable Energy Diploma Series course on Solar Electric and Wind Energy was awarded.
- The adopting jurisdiction is Cumberland County.

Non-Quantifiable Voluntary Strategies

LAND USE

The following is from the EPA Air and Radiation Office of Transportation and Air Quality Improving Air Quality Through Land Use Activities, EPA420-R-01-001, January 2001.

The physical characteristics and patterns of land development in a region can affect air quality by influencing the travel mode choices citizens have available to them. Development patterns that locate jobs, housing and recreation in closer proximity to each other, can mean shorter and fewer car and truck trips, thus reducing vehicle miles traveled (VMT) and likely reducing motor vehicle emissions. Other development patterns have the potential to improve or mitigate air quality problems by providing and promoting alternatives to vehicular travel, such as mass transit, walking, or biking. The most significant urban form features that can affect travel activity are:

- *Density = infill*
- *Land Use Mix – incorporating different land uses (e.g. recreation, housing, employment, shopping) with a development, a neighborhood, or a region.*
- *Transit Accessibility – locating high-density commercial and residential development around transit stations, also known as “transit oriented development,” or TOD.*
- *Pedestrian-Environment/ Urban Design Factors – features that improve the pedestrian environment such as sidewalks, clearly marked crosswalks, shade trees, benches, and landscaping; also refers to features that improve the bicycling environment such as bike paths and dedicated bike lanes, bike parking and clear signs.*
- *Regional Patterns of Development – patterns of dispersion, centralization, or clustering of activities within a metropolitan area, as well as the relationship of development to highway and transit systems; involves the interrelationships between employment and residential development and the transportation connection between sets of origin and destination points*

The air quality impacts of land use activities on transportation depend on numerous factors, including density and location of development, amount of development, mix of uses, and access to transportation alternatives. The interaction of these factors is complex, and due to the variations from one development project to another, each development needs to be analyzed individually. Studies have been conducted in Portland, Oregon; Sacramento and Los Angeles, California; Baltimore, Maryland; and Washington, DC that support VMT reduction associated with land use strategies over a 20 year time horizon.

Landscape Ordinance

Require landscaping of major nonresidential developments within the MSA. It is believed that this strategy will lower NO_x emissions. The emission reductions are not currently quantifiable, but this strategy is directionally correct.

- Fort Bragg implemented the Sustainable Installation Design Guide setting landscape requirements for all new development in December 2003.
- Previous Update: All new construction/renovation projects must comply with requirements in the Installation Design Guide.
- **Update:** Fort Bragg continues to enforce compliance with the Installation Design Guide on all new construction/renovation projects as it pertains to landscape requirements.
- The City of Fayetteville adopted a buffer/landscape ordinance effective June 30, 2004 for all new development or redevelopment.
- Hope Mills has a landscape and tree preservation ordinance; however they are expected to revise their ordinance to include residential home sites in early 2005.
- Previous Update: Since 2001 the Town of Hope Mills has implemented a landscape and tree preservation ordinance. This ordinance is in the process of being revised to include residential home sites. The Planning Board has been reorganized and will begin a new schedule as of July 1. They will begin revisiting this ordinance with the beginning of the new fiscal year.
- Previous Update: Due to the reorganization of the Planning Board and the Board of Commissioners the Town of Hope Mills has not revised the ordinance to include residential development; however they continue to have plans to re-address the ordinance at a later date. The ordinance currently applies to non-residential development.
- **Update:** Since the beginning of 2006, construction and development projects within the Town of Hope Mills have curtailed. However, the Tree Preservation Ordinance and the Landscape Ordinances, especially pertaining to nonresidential development are being enforced as currently written. Any changes to those ordinances have been under discussion with various committees within the Town. However, to date, no action has been proposed nor any action taken. Once the Town is caught up on budget and auditing concerns, staff will be able to devote the time necessary to accomplish re-addressing a revised version of the landscape ordinance to include residential home sites. We are continuing to move forward with this project with a projected completion date of December 2006.

- Cumberland County and the smaller jurisdictions are reviewing ordinance amendments to require landscaping on new non-residential developments.
- Previous Update: A draft of the ordinance amendments has been proposed to the Cumberland County Joint Planning Board and was referred to their Comprehensive Planning Committee for review. The Town of Wade and Godwin are currently governed by the Cumberland County Ordinance.
- Previous Update: Cumberland County Planning Board adopted the ordinance unanimously on November 21, 2005.
- **Update:** Cumberland County Planning Board has been enforcing the revised landscape ordinance.
- Previous Update: The Town of Stedman adopted the ordinance unanimously on December 1, 2005.
- **Update:** The Town of Stedman has been enforcing the revised landscape ordinance.
- Previous Update: An illustration of the concept is being developed for the smaller jurisdictions.
- **Update:** Illustrations were developed for the smaller jurisdictions.
- The strategy will be implemented by December 2005 countywide.
- The adopting jurisdictions are Cumberland County, City of Fayetteville, Falcon, Godwin, Hope Mills, Stedman, Wade, and Fort Bragg.

Transit/Pedestrian/Mixed Use Oriented Development

Add a mixed-use alternative to zoning ordinance along transit lines and include sidewalks, shade trees, benches, and landscaping as well as bike paths/lanes, which will increase the desirability of walking and biking and promote the use of transit. Work with schools and parks to facilitate pedestrian crossing from subdivisions to schools. Fort Bragg is building upon existing mixed-use development by adding pedestrian trails and sidewalks. There is no way to quantify these emission reductions without an extensive base-line study and follow-up studies. However, NO_x reductions are supported by the Portland, Oregon study cited on Page 26 of "Improving Air Quality Through Land Use Activities". The Portland, Oregon study supports 8% decrease in VMT and NO_x emissions decrease of 6%.

- Cumberland County is revising its ordinances to include mixed-use development and released a draft in June 2004. Ordinance amendments will be adopted by December 2005.
- Previous Update: June 20, 2005 the Cumberland County Commissioners unanimously approved the ordinance amendments to include Mixed Use Oriented Development.
- **Update:** Cumberland County has been enforcing the amendments to the landscape ordinance which include Mixed Use Oriented Development.
- Fort Bragg requires all projects to include sidewalks and bicycle racks. Some of the major projects also include bus stops.
- **Update:** To minimize footprint and increase density a majority of new facilities on Fort Bragg are now multi-story.
- The Town of Wade requires sidewalks as part of its Subdivision Ordinance.
- Previous Update: The Fayetteville Area Metropolitan Planning Organization will host 8 Walkable Communities workshops across the local area. This is a \$20,000 investment designed to make the community more walkable and pedestrian friendly. The workshops are scheduled to take place in late April or early May 2005.
- Previous Update: The 8 Walkable Communities workshops were held during the week of May 2-6 2005. There was great attendance at each workshop, including local officials and citizens. A report of the workshops is being written and plans for further actions to get the communities that participated in the workshops more walkable are being addressed.
- **Update:** As a result of hosting the Walkable Communities workshop, the Town of Stedman has created a final draft of greenway standards. The final draft which includes inter-development connection and a development open space requirement will be addressed at the next Town meeting in July.
- The adopting jurisdiction is Cumberland County for all participating agencies.

Infill Development

Promote infill and brownfield development in urban areas, to utilize existing infrastructure and to decrease and/or maintain VMTs. Strengthening the downtown area through economic incentives, available for businesses in the downtown area through the Downtown Loan Program and Historic Properties, a public/private partnership. It is believed that this strategy will lower NOx

emissions by decreasing VMT (promotes Pedestrian Transit and Mass Transit Use). The emission reductions are not currently quantifiable, but this strategy is directionally correct. Currently, the City of Fayetteville, Cumberland County and the Town of Stedman have ordinances that govern Zero Lot Line Developments, which foster land preservation and infill, while increasing density.

- Fort Bragg will continue to redevelop existing urban land use. The majority of projects are built on the currently developed sites instead of new, undisturbed sites as part of their Sustainable Installation Design Guide, which was implemented beginning in December 2003.
- **Update:** Fort Bragg continues to implement the guidance outlined in the strategy.
- **Previous Update:** The Town of Wade is considering adding Zero Lot Line Ordinance to its subdivision ordinance, encouraging infill development and it will be implemented by December 2005.
- **Previous Update:** The Town of Wade has adopted and implemented the Zero Lot Line Ordinance to its subdivision ordinance as of 2005.
- **Update:** The Town of Wade continues to implement the Zero Lot Line Ordinance.
- The adopting jurisdictions are Fort Bragg and the Town of Wade.

Shared Parking Facilities and Connectivity

This will reduce the amount of impervious surface, which contributes to the heat island effect and reduces the amount of stop and go traffic. It is believed that this strategy will lower NOx emissions by decreasing VMT. Although the emission reductions are not currently quantifiable, this strategy is directionally correct. The City of Fayetteville and the Town of Hope Mills have ordinances to allow shared parking. They include provisions for lateral access and connectivity.

- **Previous Update:** Cumberland County is revising the Zoning Ordinance and will include lateral access and connectivity as a part of it. Ordinance amendments will be adopted by December 2005.
- **Previous Update:** June 20, 2005 the Cumberland County Commissioners unanimously approved the ordinance amendments to include shared parking facilities and connectivity.
- **Update:** Cumberland County continues to enforce the revised ordinance to include shared parking facilities and connectivity.

- **Pervious Update:** The Town of Linden is in the process of developing a zoning ordinance that will allow for shared parking facilities and connectivity. The strategy will be implemented by December 2005.
- **Previous Update:** The Town of Linden is scheduled to have an unplanned meeting December 27, 2005 to address the shared parking and connectivity ordinance.
- **Update:** June 20, 2006 the Town of Linden set a date of July 18, 2006 to have the final public hearing to address the shared parking and connectivity ordinance. The board has recently appointed a new commissioner who needed more time to examine the ordinance.
- **Previous Update:** The Town of Linden has organized a beautification committee, which is represented by 3 board members and a Cumberland County Planner.
- **Previous Update:** The Town of Linden beautification committee has been meeting since August 2, 2005. They are currently examining adopting an open burning policy regarding offsite burning of household trash and debris.
- **Update:** The Town of Linden beautification committee will meet in August 2006 to make a final decision on the open burning policy regarding offsite burning of household trash and debris.
- The adopting jurisdictions are Cumberland County, Falcon, Godwin, Linden, and Wade.

Urban Reforestation/ Green Space

The Public Works Commission has policies to maintain tree coverage in watershed areas and seek to expand land acquisition for preservation of the watershed. NC Forest Services is seeking grant funding to plant at least 100 trees. Cumberland County completed a public green space inventory of the entire county in March 2004 and a conservation subdivision option will be investigated. It is believed that this strategy will lower NOx emissions by reducing the heat island affect. Although, the emission reductions are not currently quantifiable, this strategy is directionally correct.

- Since 2003, the Watershed Resource Team with PWC has added about 60 acres to the watershed buffers and has planted about \$2000 worth of plant species.
- The NC Forest Service on March 31, 2004 planted 250 trees throughout Pope Air Force Base, Fayetteville, and other parts of Cumberland County, exceeding their goal of 100 trees. They plan to make this an annual event as part of Arbor Day.

- Previous Update: As part of Arbor Day 2005 events at Pope AFB, the NC Forest Service planted 250 longleaf pine trees.
- Previous Update: Fort Bragg has planted 836 trees on post since January 1, 2004 and continues to plant with all new developments and buildings. Of the 836 trees planted, 483 have been planted since July 2004.
- Previous Update: To date nearly 1,100 trees have been planted on Fort Bragg this year.
- Previous Update: There have been 100 Dogwood trees planted around the City of Fayetteville as of April 2005 in celebration of The Public Works Commission 100th Anniversary.
- The adopting jurisdictions are the City of Fayetteville and Fort Bragg.

MOBILE SOURCES

The Fayetteville MSA reviewed many Alternative Fuels (AF) and Alternative Fueled Vehicle (AFV) possibilities, but, because the infrastructure is not in place at this time and developing it would be cost prohibitive and it could not be implemented by December 2005, no other governments agreed to participate. Mobile source strategies will be reviewed and evaluated for long range planning in this area.

Alternative Fuels and AF Vehicles

Fort Bragg has developed a plant to convert its fleet to Bio-Diesel 20 and Ethanol E85. This project includes an AF fueling station. 185 vehicles will be converted to B20 (100,000 gallons of diesel fuel). 158 Flexible Fuel vehicles will use approximately 55,000 gallons of E85 per year. This strategy is expected to reduce VOC and in turn hazardous air pollutants (HAPs), NOX and particulate matter. The bio-diesel strategy shows a slight increase in NOx emissions, however with the other pollutant reductions, this strategy is believed to be of value.

- Previous Update: To date, 25 off-road vehicles have been converted to B20. In Fiscal Year '03 Fort Bragg used 7,755 gallons of B20. In Fiscal Year '04 that number increased to 10,000 gallons.
- Previous Update: Estimated B20 usage for FY05 is 30,000 gallons.
- Fort Bragg expects to have an alternative fueling facility completed and their gasoline-powered vehicles converted to E85 in Fiscal Year '05.
- Previous Update: Site for E85 facility has been approved and project assigned.

- Previous Update: The COCO (contractor-owned, contractor-operated) facility is working with DLA (Defense Logistics Agency) to secure funding for tanks and pumps.
- **Update:** Due to the increase cost of B20 Fort Bragg has not be able to continue purchasing the alternative to regular diesel. As a supplement project Fort Bragg has initiated exploring and funding an E85 project. Funding for the E85 project in the amount of \$25,000 has been partially dedicated. A tentative site for the project has been assigned. This project will directly effect a larger population. The E85 will be available not only to military vehicle but also to anyone who has access to the base for use in their personal vehicles.
- Previous Update: The Public Works Commission has purchased a Hybrid Ford Escape (gasoline/electric) for use by employees.
- The adopting jurisdictions are Fort Bragg and the City of Fayetteville through the Public Works Commission.

Idling Restrictions

Festival Park will include electrical outlets to be used by vendors/exhibitors to reduce truck idling during festivals and events. It is expected that this strategy will decrease NOx emissions. Festival Park construction is scheduled to begin on March 1, 2005 and to be completed by September 20, 2005.

- Previous Update: Construction of Festival Park is on schedule and due to open September 20, 2005.
- Previous Update: Construction of Festival Park is still in development. The project was divided into two separate projects, North side & South side, due to the overall cost when the project was bid together as one large project. The South side of Festival Park has been completed and work will begin on the North side project in December, with about 11 months to finish.
- **Update:** Festival Park North contract started in February 2006 with an estimated completion date of late December 2006. There was a small delay due to funding. The issue has since been resolved and the project is currently about 20% complete.
- The adopting jurisdiction is the City of Fayetteville.

TRANSPORTATION

Using Intelligent Transportation Systems (ITS) and Dynamic Message Signs (DMS) for Congestion Management and Ozone Alerts

Project U-3635, Closed Loop Signal System, will provide a new area-wide closed loop signal system. Dynamic Message Signs will be installed at congested intersections/corridors. There will be an expansion of existing continuous flow right turn lanes in the urbanized area. It is expected that this project will decrease NOx emissions by decreasing traffic congestion. It is currently difficult to quantify this effort, however other examples of this system have shown anywhere from 0-20% reductions in traffic congestion resulting in less idling, travel time, and, as a result, NOx emission reductions.

- The summer of 2005 is the expected completion time for the closed loop signal system.
- Previous Update: October of 2005 is the most recent projected date of the closed loop signal system. The project has experienced some delays because the city wants to have the latest and best software installed, so it is not outdated by the time the system gets up and running.
- Previous Update: ITS program includes 220 traffic signals. All of the cameras, which will support the system, are in place, 7 of those cameras are currently running. The delay in the project was due to the state software.
- **Update:** Currently all of the cameras are running. This project is completed.
- Two dynamic message signs along I-95 have been installed, but are not yet operational.
- Previous Update: The two dynamic message sign along I-95 are operational.
- Previous Update: There are two more dynamic message sign that will be installed along the 401 bypass. Those dynamic message signs were delayed due to a sub sequential agreement for additional work, which was not included in the original contract. An amendment to the contract to reorder additional materials was needed. The project has continued as planned and is scheduled to be operational February 2006.
- **Update:** This project is completed.
- The adopting jurisdictions are Cumberland County, City of Fayetteville, and Hope Mills.

Enhance Mass Transit System

The Fayetteville Area System of Transit is redesigning routes to be more convenient to riders and plans to increase frequency of transit services to 15 minutes. The plan is a hybrid deviated fixed route demand response system. It allows for riders to be picked up from their home by a van and transported anywhere in that zone by the van. Riders also can be picked up and taken to a large super stop, where they can catch the bus and be transported all across the service area. Increase transit service is expected to reduce VOC and NOx emissions by reducing VMT.

- The enhanced transit service is expected to be in place by December 2005. The plan has been presented to all of the local municipalities involved and is currently in the funding planning phase. Dates of presentations:
 - Fayetteville City Council: January 12, 2004
 - Spring Lake Commissioners: March 22, 2004
 - Hope Mills Commissioners: April 19, 2004
 - Cumberland County Commissioners: May 3, 2004
- Previous Update: On January 25, 2005, the transit director presented a countywide transit service proposal to the City-County Liaison Committee. All City of Fayetteville and Cumberland County elected Officials, City and County Managers are represented on this committee. On June 27, 2005 the transit director will give an updated presentation to the City Council on the enhanced mass transit system. With the adoption and financing of this project, it will address the strategy to increase Rural Transportation Paratransit.
- Previous Update: The City of Fayetteville has continued planning the countywide transit system. There have been numerous presentations addressing the plan. An amendment to the FFY 2006-2012 MTIP has been approved to fund 16 vans for service expansion.
- **Update:** In April 2006 the Cumberland County Board of Commissioners and the Fayetteville City Council held a special meeting. During this meeting they formed a special committee, consisting of county and city officials, to expedite the planned countywide transit system. The director of the Fayetteville Area System of Transit has planned to purchase 2 additional buses and one additional van in 2006-2007 fiscal year.

Fort Bragg initiated a shuttle service providing transportation around the post and connecting with municipal transit. They have also implemented a Saturday Express Shuttle that transports Fort Bragg residents to Cross Creek Mall.

- Previous Update: The Fort Bragg shuttle service continues to provide transportation around the installation and connection with the municipal transit system.
- **Update:** The Fort Bragg shuttle service continues to operate as is.
- The Fort Bragg shuttle service began on June 1, 2003 and is ongoing. Average weekly ridership for the shuttle is between 650-750 riders.
- Previous Update: Average weekly ridership on the Fort Bragg shuttle has risen to just over 1,580 per week.

Update:

- The Fort Bragg Saturday Express Shuttle started with two Saturdays during the Christmas Holidays of 2003. However, it became permanent in the summer of 2004. The average ridership is approximately 50 passengers per week.
- Previous Update: Due partly to deployment The Fort Bragg Saturday Express Shuttle, funded by Cross Creek Mall, was canceled due to insufficient ridership.
- **Update:** The Fort Bragg Saturday Express Shuttle has maintained canceled due to insufficient ridership.
- The adopting jurisdictions are City of Fayetteville and Fort Bragg.

Formulate Car and Van Pooling

The Fayetteville Area System of Transit changed a staff position from Special Projects Coordinator to Ridesharing and Community Outreach Coordinator. This is an effort to expand public outreach for FAST and encourage more ridesharing and vanpooling. Work is being done to develop a database to connect riders. The transit provider is advertising vanpooling and carpooling programs. FAST has received a license from DOT for database matching software. The software is regionally based to where coordination can be made across county lines. This strategy is believed to decrease NOx emissions based upon an increase in public transit usage and car and vanpooling, and a decrease in VMT.

- This strategy was implemented in June of 2004 and is ongoing.
- Previous Update: On April 29, 2005, FAST submitted a grant proposal for the Van Pooling program. On July 7, 2005 the committee will meet to discuss the grant applications and in August they will make a final decision on grant recipients.

- Previous Update: The grant process is an annual submittal. The previous grant application was submitted and was suggested by state to make some modification and resubmitted the proposal in April 2006. The grant is in the process of being modified for submittal in April 2006.
- **Update:** Due to the reclassification of the Vanpool Coordinator to an Analyst a grant was not submitted for 2007. Before the grant can be submitted a marketing plan must be completed which will be part of the new responsibility of the Analyst. The project will begin fiscal year 2006-2007.
- Previous Update: The Ridesharing and Community Outreach Coordinator attended several workshops on Commuter Choice Transportation and developed a Ridesharing Manual and the Emergency Ride Home element of the plan. In 2005, the coordinator is revising the proposal to reflect changes in insurance, training and to implement the rate per mile established by finance based on revenue and expenditure projections from previous year. Also, in April, the coordinator submitted an application initiating administrative assistance for the Vanpool/Carpool Program.
- Previous Update: The Ridesharing and Community Outreach Coordinator continue to attend training and workshops. The administrative assistance for the Vanpool/Carpool program is apart of the proposal, which they will be resubmitting in April 2006.
- **Update:** The Vanpool Coordinator position has been reclassified to an Analyst. The reclassified position has added responsibilities pertaining to the budget. The position will continue the efforts of a Transportation Management Program with assistance of the State Department of Transportation. NCDOT has contracted with a private firm who will work with the Analyst to develop strategies and plan implementation.
- The adopting jurisdiction is the City of Fayetteville.

Increase Rural Transportation Paratransit

Rural transportation is currently being expanded to connect outlying areas of the county and smaller municipalities. Quantification will be provided when implemented.

- The strategy will be implemented by December 2005.
- Previous Update: We are in the preliminary planning of reinstating the Town of Hope Mills route, using NCDOT PTD funds. Funding has been allocated. We plan to have this route reinstated by early fall.

- Previous Update: The Town of Hope Mills route has been approved by the town and is scheduled to go on the Fayetteville City Council agenda in January. As soon as it is approved by the City of Fayetteville the route will be implemented as soon as February 2006.
- **Update:** The Hope Mills route had not been scheduled for placement on the agenda of the Fayetteville City Council. Initially funding for the Hope Mills route had been based on existing hourly service rate. Hourly service rate for another existing route had increase, directly impacting the funding for the Hope Mills route. Due to the increase in the service rate the funding for the Hope Mills route is not available.
- The adopting jurisdiction is the City of Fayetteville.

Encourage Park and Ride for Large Events

FAST and Private Transportation providers are providing shuttle services at nominal cost to the public. Fort Bragg provides internal transportation services for large on-post events at no cost to the rider. Updates will be given for the events and included in semi-annual updates.

- The implementation of this strategy is ongoing as special events come up (i.e. Festival of Flight, May 16-26, 2003).
- **Update:** FAST and Private Transportation providers continue to provide shuttle services on request for special events.
- Previous Update: Internal transportation services were supplied for the following events: Pope Open House and All American Week. Bus transportation is also implemented in support of deployment and redeployment of units, including Rapid Field Issue (RFI).
- **Update:** Fort Bragg has continued to use this strategy as an option for large on post events.
- The adopting jurisdictions are City of Fayetteville and Fort Bragg.

CONSERVATION

Use renewable energy sources when available (i.e. solar and methane)

Encourage residents and businesses to support NC Green Power, a nonprofit program working to encourage development of renewable energy sources. A \$4.00 contribution purchases one block of green power (equivalent to 100

kilowatt-hours). We are working with NC Green Power to obtain the number of blocks of green power purchased by Cumberland County Residents.

- Implementation started in Spring 2004 and will continue to be promoted during AQ outreach, and we will include link on Cumberland County Transportation website.
- Previous Update: A typical contribution of just \$4 per month adds one block of 100 kilowatt-hours of green energy to North Carolina's power supply. Cumberland County residence has purchased a total of 257 Blocks. Each block is equal to 100 Kilowatt-hours.
- **Update:** Cumberland County residences continue to support NC Green Power. 273 blocks have been purchased since January 1, 2006.
- The adopting jurisdiction is Countywide.

Retrofitting of public buildings. Encourage construction of energy efficient buildings.

Through the "Guaranteed Energy Savings Contract", the County will engage a company to evaluate and upgrade buildings, equipment and material to increase energy efficiency. PWC is a member of the "Good Cents" Housing Program. Participating builders receive heat pump rebates and free listing of energy efficient homes for sale in the local newspaper and on the PWC website. Smaller municipalities are also promoting the "Good Cents" Housing Program. Fort Bragg is currently implementing energy reduction per Executive Order 13123 and as part of its Sustainability Plan by partnering with Honeywell Corporation to retrofit buildings on Fort Bragg (replacing inefficient interior/ exterior lighting, installing new HVAC systems with energy controls for optimum building performance. Fort Bragg also constructs new homes and retrofits older homes to meet "ENERGY STAR" standards. It is believed that this strategy will lower NOx emissions by reducing the output needed from fossil fuel plants to heat and cool homes and public building. The local EAC is still trying to quantify emission reductions, but feel this strategy is directionally correct.

- Previous Update: Cumberland County has selected a company to retrofit 12 public buildings to comply with the "Guaranteed Energy Savings Contract". Construction is projected to begin in January of 2005.
- Previous Update: Cumberland County completed a contract on September 9, 2004 to replace 144,000 square feet of black roofing with light colored roofing.
- Previous Update: The retrofit of the 12 public buildings by Cumberland County has begun and is still in progress.

- Previous Update: As of May 2005 Cumberland County has completed replacing 140,000 SF of roof area with a light colored surface to reflect the sunlight.
- Previous Update: 1. Retrofit of lighting and HVAC controls is 90% complete; all work should be completed by Feb 2006
2. Nearing completion of roof replacement on three buildings with light colored material. 25,600 SF
3. Scheduled roof replacement for spring 2006 approximately 11,000 SF
- **Update:** 1. Retrofit of lighting and HVAC controls is completed.
2. 25,600 SF of roof replacement on three buildings with light colored material has been completed.
3. Approximately 11,000 SF of roof replacement is currently under Contract.
- The promotion of “Good Cents” Housing Program and Fort Bragg’s energy reduction program are ongoing.
- Fort Bragg continues to encourage the use of light colored, high reflective materials for pavement and roofs with new and retrofitted buildings. They also encourage the use of pervious pavement where applicable.
- The adopting jurisdiction is Cumberland County for all participating agencies.

Encourage Construction and Use of Energy Efficient Equipment and Promote Purchase of “Green”/less polluting products.

Fort Bragg is implementing energy reduction strategies including low NOx burners in new major emission sources, is increasing the use of water-based paints to reduce VOC emissions and has installed a paint booth which uses only water-based paint, and is researching alternatives to replace two incinerators. These strategies will lower NOx and VOC emissions. Research efforts will include emission reductions.

- Previous Update: During the Summer 2004, Fort Bragg did research on alternatives for the incinerators. However, the alternatives did not yield sufficient results to make a change.
- On May 5, 2004, Fort Bragg shipped 8,915 pounds of Class I Ozone Depleting Substances (ODS) off the installation to the Defense Depot in Richmond, Virginia. The substances are replaced with much more environmentally safe alternatives.

- Fort Bragg continues to encourage the use of energy-efficient appliances in all renovations and new construction projects as well as low-flow appliances (showers, toilets, etc.) and limited or no irrigation. They also encourage the use of no VOC containing paints, sealants, or adhesives.
- Previous Update: Fort Bragg has continued to implement the strategy outlined. The water-based paint booth was installed May 2005 and was available for use beginning November 2005.
- **Update:** Fort Bragg continues to implement the strategy outlined.
- The adopting jurisdiction is Fort Bragg.

AWARENESS

FAMPO Air Quality Staff Position

The Fayetteville Area Metropolitan Planning Organization created a fully funded Air Quality Coordinator staff position. The staff person is responsible for coordinating air quality outreach efforts in Cumberland County as well as preparing and maintaining Early Action Compact information. It is believed that this strategy will reduce NOx and VOC emissions based upon this person working with different organizations to get the word out and get the community working on improving the Air Quality.

- This strategy was implemented in March of 2003 and is ongoing.
- Previous Update: The Air Quality Staff person has attended numerous training sessions on air quality and initiated many outreach programs.
- Previous Update: The Air Quality Staff person continues to attend numerous training sessions on air quality. The staff person has also developed a clean air campaign along with a new partnership with Division of Air Quality Fayetteville Regional Office.
- **Update:** The Air Quality Staff person has developed, and with the assistance from Division of Air Quality Fayetteville Regional Office, has implemented an extension air quality outreach program. This programs includes an air quality curriculum added to all Cumberland County Driver's education classes, and advertisement sponsorship with the local sports teams to promote air awareness.
- The adopting jurisdiction is Cumberland County for all participating agencies or local government.

Student Outreach through Education Systems

Ongoing effort using the “GLOBE” program, a worldwide hands-on, primary and secondary school-based educational science program. This is a cooperative effort, led in the US by a federal interagency program supported by NASA (National Aeronautics & Space Administration), NSF (National Science Foundation), EPA (Environmental Protection Agency) and the U.S. State Department. There are currently 65 teachers in Cumberland County who are trained and present the program that promotes environmental stewardship and research. Staff, Air Quality Stakeholders, and Technical Committee members are also providing classroom presentations upon request. It is believed that this strategy will lower NO_x emissions. Although the emission reductions are not currently quantifiable, this strategy is directionally correct.

- Previous Update: The Watershed Action Team (WAT) is near completion with part two of the GLOBE Atmosphere training. Subsequent to this training we will have 21 schools with weather stations and seven ready to collect Ozone (surface) readings.
- Previous Update: Part two of the GLOBE Atmosphere training has been completed. 11 Cumberland County School are now equipped to take ozone readings. 11 other Cumberland County schools will be equipped to collect ozone readings once they agree to collect 2 months worth of data.
- **Update:** Due to funding constraints the final 11 Cumberland County schools have not been equipped to collect ozone readings. They are continuing to explore other funding options to secure financial support for the program.
- The adopting jurisdiction is Cumberland County.

Public Education/Outreach at Community Events & Churches

This is an ongoing effort through the Speakers Bureau. Staff and volunteers participate in festivals, fairs, community meetings, etc to provide information on air quality and the individual measures that can be taken to improve the air we breathe. It is believed that this strategy will lower NO_x emissions. Although the emission reductions are not currently quantifiable, this strategy is directionally correct.

- The implementation of this strategy began with the first outreach event, the Spring Nature Fair, at Clark Park on April 5, 2003 and is ongoing.
- Previous Update: We are continuing every effort to attend public events where we can educate the public about air quality. On April 16, 2005 we were able to

implement this strategy at Spring Lake's Spring Fling. On April 23-24, 2005, staff also participated in the annual Fayetteville Dogwood Festival. This strategy is ongoing.

- **Update:** We have attended various community events voluntarily and by request. The events and dates are listed in the introductions.
- The adopting jurisdictions are Cumberland County, City of Fayetteville, Falcon, Godwin, Linden, Spring Lake, Stedman, and Wade.

Speakers Bureau

Participation in radio/television programs to reach the general public with air quality information and tips, advertise meetings and involve the local newspapers and churches in disseminating information to increase public awareness and participation in implementing voluntary reduction strategies. It is believed that this strategy will lower NOx emissions. Although the emission reductions are not currently quantifiable, this strategy is directionally correct.

- This strategy was implemented with the first regular Cumberland County Air Quality Stakeholders meeting on May 15, 2003 and is ongoing.
- Previous Update: Air Quality Stakeholder meetings are ongoing. On March 24, 2005 the Planner Director gave an air quality presentation to the Cumberland County Business Council.
- **Update:** We continue to have speakers available for events/programs. The events and dates are listed in the introduction.
- The adopting jurisdictions are Cumberland County, City of Fayetteville, Falcon, Godwin, Linden, Spring Lake, Stedman, and Wade.

Air Quality Web Page

Maintained and updated by FAMPO (Fayetteville Area Metropolitan Planning Organization). The site provides information on upcoming meetings, seasonal air quality tips, the Early Action Compact program and other relevant topics. It is believed that this strategy will lower NOx emissions. Although the emission reductions are not currently quantifiable, this strategy is directionally correct.

- This strategy was implemented in March of 2003 and is ongoing.

- Previous Update: The air quality web page is currently being remodeled and updated to maintain accurate information and links while becoming more users friendly.
- Update: The web page is updated on a regular basis. The page includes links to other air quality websites, local air quality outreach material and past and previous winner to air quality contests that we hold.
- **Update:** As an addition to the website we now include the AQI forecast information during ozone season.
- The adopting jurisdiction is Cumberland County for all participating agencies.

Promote Bus Ridership for Youth

Fayetteville Area System of Transit (FAST) is promoting bus tours for children of all ages, educating them on how to use the transit system and the benefits of using transit (including air quality and health issues). Various organizations have tours for groups (i.e. Boys and Girls Club) that include giving them free bus passes. It is believed that this strategy will lower NOx emissions by increasing future mass transit use and decreasing VMT. Although the emission reductions are not currently quantifiable, this strategy is directionally correct.

- The implementation of this strategy is ongoing.
- The adopting jurisdiction is the City of Fayetteville.

Air Quality Educational System at the local libraries.

Air Quality handouts and flyers are made available at all branches. Make available for children's summer program. It is believed that this strategy will lower NOx emissions by raising awareness. Although, the emission reductions are not likely quantifiable, this strategy is directionally correct.

- The implementation of this strategy for the local libraries began in May of 2003 and is ongoing. Inclusion in the children's summer reading program will start in the summer of 2005.
- Previous Update: Plans have been made to implement air quality awareness programs at every branch library in Cumberland County. These programs are aimed at educating children on air quality. We will kick off the programs with an informational booth at their end of the summer reading program celebration at the end of July, and the regular programs are scheduled to begin in August 2005 and will be ongoing.

- Previous Update: The Air Quality Coordinator along with a partner for DAQ organized and presented all 7 Cumberland County Library with the “Fresh Air” program.
- **Update:** We have continued to have informational materials available at all the local libraries. We are scheduled to organize our annual display in August 2006 at the Headquarters library in Downtown Fayetteville.
- The adopting jurisdiction is Cumberland County for all participating agencies.

Air Quality poster/essay contest for schools.

Air Quality related contest to raise air awareness. It is believed that this strategy will lower NO_x emissions. Although the emission reductions are not likely quantifiable, this strategy is directionally correct.

- The implementation of this strategy began in 2003 with the 2003-2004 school year for public schools and will begin in November 2004 for public and private schools for the 2004-2005 school year.
- Previous Update: We completed our second annual poster/essay contest for 2004-2005 school year. A calendar was constructed of the winners from the first poster contest, highlighting such days as ozone season and Air Quality Week. We are now making plans to conduct our third annual poster/essay contest for 2005-2006 school year.
- Previous Update: November 2005 we completed our third annual poster/essay contest. There are plans to construct an information air quality book, which will include some of the entries of the contest.
- **Update:** The informational air quality book has been fully funded and is currently under construction.
- The adopting jurisdiction is Cumberland County for all participating agencies.

Early Action Compact June Progress Summary Table

A. Control Measure	B. Summary Description of Measure	C. Program/Measure Status	D. Specific Implementation Date	E. VOC Reduction	F. NO _x Reduction	G. Resources (FTE's \$\$\$)	H. Additional Information
Expand vehicle I & M	Expansion of the vehicle emissions inspection and maintenance program.	The program has expanded from 9 counties to 48, and improved the testing method.	July 2003	0.6 TPD	0.7 TPD	N/A	N/A
Retrofit school buses	Retrofitting 66 school buses serving the Fort Bragg Schools.	There are 5 remaining buses which need to be retrofitted. The manufacturing company (Donaldson) will be personally coming out to finish the remaining 5 buses and to do a complete inspection of the installation	Grant signed in : September 2004 Begin retrofit: Summer 2005 Final 5 completed: Summer 2006	0.42	N/A	\$50,000 grant from NCDENR	N/A
Open burning ban – ozone action days	The North Carolina Environmental Management Commission approved a new rule that bans open burning on forecasted, “air quality action days”, and code orange or above.	The ban applies to 39 counties including Cumberland County. The DAQ formed an open burning outreach team, who disseminate information to the public.	June 2004	0.2 TPD	0.1 TPD	N/A	N/A
Use landfill gas;	Cumberland County Landfill harvests methane and through a contract with Biomass Energy, then sells the energy to Cargil Inc., a local industry. Cargil has continued to increase	Due to the hurricanes of last season the new boiler was delayed in being manufactured. However, the new boiler has been delivered to Cargill	Harvest methane: June 2004 Broiler: December 2006	N/A	0.014 TPD	N/A	N/A

A. Control Measure	B. Summary Description of Measure	C. Program/Measure Status	D. Specific Implementation Date	E. VOC Reduction	F. NOx Reduction	G. Resources (FTE's \$\$)	H. Additional Information
	their use of landfill gas.	Inc., but due to the demand of steel the structure which was to be built to house the boiler is not available right now. Once the building structure is constructed the boiler will be installed. This new boiler will make it possible to burn an estimated 20%-25% additional landfill gas. As of May 2006 Cargill has burned 109,992,000 cubic feet of landfill gas					
Support NC Green Power	NC GreenPower is an independent, nonprofit organization established to improve North Carolina's environment through voluntary contributions toward renewable energy.	A typical contribution of just \$4 per month adds one block of 100 kilowatt-hours of green energy to North Carolina's power supply. Cumberland County residence has purchased a total of 273 Blocks. Each block is equal to 100 Kilowatt-hours.	Spring 2004	N/A	N/A	N/A	http://www.ncgreenpower.org/
Landscape Ordinance – non residential	Require landscaping of major non-residential developments within the MSA.	Town of Hope Mills: Changes to the existing landscape ordinance to	Town of Hope Mills: December 2006	N/A	N/A	N/A	N/A

A. Control Measure	B. Summary Description of Measure	C. Program/Measure Status	D. Specific Implementation Date	E. VOC Reduction	F. NOx Reduction	G. Resources (FTE's \$\$)	H. Additional Information
Landscape Ordinance – non residential		<p>include residential development has continued to be evaluated by the town board. Due to the insufficient number of staff, a revised ordinance has not been developed. A draft revised ordinance is still a priority of the board and will be examined once staff time is reorganized.</p> <p>Cumberland County: The ordinance was adopted unanimously.</p> <p>Town of Stedman: The ordinance was adopted unanimously</p> <p>Town of Falcon: January 9, 2006 the Town of Falcon Town Board adopted landscape the ordinance.</p>	<p>Cumberland County: November 21, 2005</p> <p>Stedman: December 1, 2005</p> <p>Town of Falcon: January 2006</p>				
Pedestrian Trails	Fort Bragg is building upon existing mixed-use development by adding pedestrian trails and sidewalks.	Fort Bragg continues to implement this strategy with existing mixed-use development.	2003	N/A	N/A	N/A	N/A

A. Control Measure	B. Summary Description of Measure	C. Program/Measure Status	D. Specific Implementation Date	E. VOC Reduction	F. NOx Reduction	G. Resources (FTE's \$\$)	H. Additional Information
Brownfield development	Promoting infill and brownfield development in urban areas, to utilize existing infrastructure and to decrease and/or maintain VMT's.	Fort Bragg: continues to implement the guidance developed under the Sustainable Installation Design Guide. Town of Wade continues to implement the Zero Lot Line Ordinance.	Fort Bragg: December 2003 Town of Wade: January 2005.	N/A N/A	N/A N/A	N/A N/A	http://www.bragg.army.mil/sustainability/ N/A
Shared parking facilities	This will reduce the amount of impervious surface, and reduces the amount of stop and go traffic.	Cumberland County: Unanimously adopted. Town of Linden: June 20, 2006 the town set a date, July 28, 2006 to have the final public hearing to address the shared parking and connectivity ordinance. If adopted the ordinance will mirror Cumberland County's shared parking and connectivity ordinance.	Cumberland County: June 2005 Town of Linden: December 2006	N/A N/A	N/A N/A	N/A N/A	N/A N/A

A. Control Measure	B. Summary Description of Measure	C. Program/Measure Status	D. Specific Implementation Date	E. VOC Reduction	F. NOx Reduction	G. Resources (FTE's \$\$)	H. Additional Information
Green space inventory	A map of all the public green space inside the county.	Cumberland County completed a public green space inventory of the entire county.	March 2004	N/A	N/A	N/A	N/A
185 Vehicles converted to bio diesel	185 vehicles on Fort Bragg will be converted to B20 (100,000 gallons of diesel fuel).	Due to the increase cost of B20 Fort Bragg has not be able to continue purchasing the alternative to regular diesel. As a supplement project Fort Bragg has initiated exploring and funding an E85 project. Funding for the E85 project in the amount of \$25,000 has been partially dedicated. A tentative site for the project has been assigned.	2003 B-20 implemented	0.005 TPD	0.003 TPD	N/A	
Electrical outlets – reduce truck idling	A new development in the City of Fayetteville, "Festival Park," will include electrical outlets to be used by vendors/exhibitors to reduce truck idling during festivals and events.	Festival Park North contract started in February 2006 with an estimated completion date of late December 2006. There was a small delay due to funding. The issue has since been resolved and the project is currently 20% complete.	Winter 2006	N/A	N/A	Progress Energy \$10 Million	http://www.cityoffayetteville.org

A. Control Measure	B. Summary Description of Measure	C. Program/Measure Status	D. Specific Implementation Date	E. VOC Reduction	F. NOx Reduction	G. Resources (FTE's \$\$)	H. Additional Information
Using ITS and dynamic message	Intelligent Transportation System will include a system of interconnected traffic signals (signal controllers) whose major objective is to support continuous movement and minimized delay along an arterial or a network of arteries.	Project Completed.	ITS, 2006	N/A	N/A	Committed	N/A
Using ITS and dynamic message	Dynamic message sign will be installed at congested intersection/corridors.	Project Completed.	Dynamic message signs, 2 along I-95 completed 2005, 2 along 401 Bypass will be operational 2006.	N/A	N/A	Committed	N/A
Enhance mass transit	The City of Fayetteville is in the process of developing a countywide transit system to serve a larger population than the existing citywide transit system.	The City of Fayetteville has continued planning the countywide transit system. April 2006 a special committee had been formed to expedite the planned countywide transit system.	County Wide Transit plan: January 2004	N/A	N/A	Federal, State and Local Funding	http://fayettevilleonline.com/fast/
Develop database – carpool	ShareTheRide.com is a free ridematching service that provides you an easy way to find others in your area who are interested in sharing	A database is available where interested participants may log-on and input data to sign up for a car/van pool	June 2004	N/A	N/A	N/A	http://www.sharetheride.com/

A. Control Measure	B. Summary Description of Measure	C. Program/Measure Status	D. Specific Implementation Date	E. VOC Reduction	F. NOx Reduction	G. Resources (FTE's \$\$)	H. Additional Information
Develop database – carpool	the ride to work in a carpool or vanpool.	statewide. The state has purchased five licenses for software to be used by participants. The software is called Ridepro. This program allows participants to connect with local individuals who would be interested in a car/van pool.	June 2004	N/A	N/A	State Funded	N/A
Increase rural paratransit	Rural transportation is currently being expanded to connect outlying areas of the county and smaller municipalities.	The Hope Mills route had not been scheduled for placement on the agenda of the Fayetteville City Council. Initially funding for the Hope Mills route had been based on existing hourly service rate. Hourly service rate for another existing route had increase, directly impacting the funding for the Hope Mills route. Due to the increase in the service rate the funding for the Hope Mills route is not available.	2007	N/A	N/A	Federal, State, and Local Funding	N/A

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Encourage Park and Ride for events	FAST and Private Transportation providers provide shuttle services at nominal cost to the public.	FAST and Private Transportation providers continue to provide shuttle services on request for special events.	2003	N/A	N/A	N/A	N/A
	Fort Bragg provides internal transportation services for large on- post events at no cost to the rider.	Fort Bragg has continued to use this strategy as an option for large on post events.	2003	N/A	N/A	N/A	N/A
Energy Efficient Buildings	Through the “Guaranteed Energy Savings Contract”, the County will engage a company to evaluate and upgrade buildings, equipment and materials to increase energy efficiency.	1. Retrofit of lighting and HVAC controls is complete.	2006	N/A	N/A	Committed	N/A
		2. Roof replacement on three buildings with light colored material. 25,600 SF is completed.	2006				
		3. Roof replacement for approximately 11,000 SF is under contract.	2006				
Energy reduction – LNB; water based paints	Fort Bragg is implementing energy reduction strategies to include low NOx burners in new major emission sources and increasing the use of water-based paint by installing a paint booth, which uses only water-based paint.	Fort Bragg has continued to implement the strategy outlined.		N/A	N/A	N/A	http://www.bragg.army.mil/sustainability/goal6.htm
		The water-based paint booth was installed May 2005 and was available for use beginning November 2005.	November 2005	N/A	N/A	N/A	

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Air Quality Coordinator	The Fayetteville Area MPO created a fully funded Air Quality Coordinator staff position.	The Air Quality Coordinator position has been implemented as of March of 2003.	March 2003	N/A	N/A	Committed	N/A
Student Outreach	GLOBE (Global Learning and Observations to Benefit the Environment) is a worldwide hands-on, primary and secondary school-based education and science program.	Due to lack of funding the final 11 schools have not been equipped with material to collect ozone readings. Sources of additional funding are being sought out and will continue into the 06-07 school year.	December 2005	N/A	N/A	Cargill, Inc. and Cumberland County Schools	http://www.globe.gov/globe_flash.html
Public education outreach	A partnership between FAMPO and DAQ Fayetteville Regional Office allows staff and volunteers to participate in festivals, fairs, community meetings, etc. to provide information on air quality.	We have attended various community events voluntarily and by request.	March 2003	N/A	N/A	FAMPO and DAQ	N/A
Speakers Bureau	Participation in radio/television programs to reach the general public.	We continue to have speakers available for events/programs.	May 2003	N/A	N/A	N/A	N/A
Air Quality web page	Fayetteville Area MPO developed an air quality web page.	As an addition to the website we have incorporated the AQI forecast information during ozone season.	March 2003	N/A	N/A	FAMPO	www.fampo/airquality.com

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Promote bus youth riders	Fayetteville Area System of Transit (FAST) promotes bus tours for children of all ages, educating them on how to use the transit system and the benefits of using transit.	FAST continues to offer this service to various organizations and groups.	2003	N/A	N/A	FAST	N/A
Education – libraries	To educate children in grades K-7, “ Fresh Air ” presentations were planned for all the Cumberland County Library.	We are scheduled to organize our annual educational display in August.	August 2005	N/A	N/A	FAMPO	N/A